

RECEIVED  
CENTRAL FAX CENTER

003

NOV 11 2004

PATENT  
Docket No.: 53924US010**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: <b>DESMOND T. CURRAN AND ELFED I. WILLIAMS</b>	
	Group Art Unit: 3761
Serial No.:	09/871,223
	Examiner: Aaron J. Lewis
Filed:	May 31, 2001
For:	<b>MANNER OF ATTACHING COMPONENT ELEMENTS TO FILTRATION MATERIAL SUCH AS MAY BE UTILIZED IN RESPIRATORY MASKS</b>

Certificate of Facsimile Transmission	
Pursuant to 37 CFR 1.8, I certify that this correspondence is being sent to the telephone number shown below, addressed to Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the below indicated date.	
To Facsimile Number 703-872-9302	Signature <i>Lynelle K. Grube</i>
Date <i>November 17, 2003</i> <del>October</del> , 2003	Printed Name Lynelle K. Grube

**DECLARATION UNDER 37 CFR §1.131 OF DESMOND T. CURRAN**

Mail Stop Non-Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

I, Desmond T. Curran, hereby declare that:

1. I received a Mechanical Engineering degree from the University of Aston in Birmingham, England in 1977, and have been a Chartered Engineer and a member of the Institute of Mechanical Engineers since 1990.
2. From 1970 to 1990 I was employed by Royal Philips Electronics, where my last position was Senior Design and Installation Engineer. From 1990 to the present I have been employed by 3M United Kingdom PLC ("3M UK") in Aycliff, England, first in the Division Engineering Department and since February 2002 in the Product Development Laboratory where I have worked on manufacturing and designing respiratory protection devices. My current position is Senior Product Development Specialist.
3. I am an inventor or co-inventor of 17 U.S. patents, generally involving personal respiratory protection devices, their components and their manufacturing. I

Serial No. 09/871,223Docket No.: 53924US010

am also a co-inventor of the above-mentioned U.S. Patent Application Serial No. 09/871,223 (the "Application").

4. I have read the Application, its pending claims 21 – 43 and 66 – 92, the Office Action mailed July 15, 2002 and the cited references including U.S. Patent No. 6,047,698 (Magidson et al.).

5. Attachment A is a copy of 3M Record of Invention No. DE1493 (the "ROI"), except that the dates have been covered. All of the covered dates are earlier than the August 20, 1998 Magidson et al. filing date.

6. The ROI was written, signed and dated at the Saint Paul, Minnesota headquarters of 3M Company ("3M US") before August 20, 1998 by my retired 3M US colleague Lee Hitzeman (see the "Described by:" signature block at the bottom of page 2). My retired 3M UK coinventor Elfed I. Williams and I are both listed on page 1 in the "Investigator" blocks (as "Des T. Curran" and "Wil Williams") along with Mr. Hitzeman and Mr. Marvin H. Simons of 3M US. The ROI was read and understood in the U.S. before August 20, 1998 by my 3M US colleague Bruce W. Livermore (see the "Witness:" signature block at the bottom of page 2).

7. The ROI generally describes work done at 3M US on valve attachment tooling for a 3M UK flat-folding respirator design known internally as the "Genesis" mask. The Genesis mask is similar to the mask shown in Fig. 21 of my U.S. Patent No. 6,123,077. The described tooling is shown in the four numbered sketches at the back of Attachment A, and is generally like Fig. 5A through Fig. 5E in the Application. Attachment A shows that the described tooling was fabricated and tested at 3M US and that our invention was actually reduced to practice before August 20, 1998. For example, as stated in the last paragraph on page 3 of Attachment A, "A prototype has been built to verify this concept. A video tape and sample parts are available to show the hardware in operation and results of the process". I will discuss this reduction to practice further by referring to particular claims.

8. Claims 21, 31, 33, 34, 40, 66, 67, 70 – 76, 79, 81 – 86, 89, 91 and 92 have been rejected as being anticipated by Magidson et al. Attachment A shows that the invention of claims 21, 31, 34, 66, 67, 71 – 76, 79, 81 – 86, 89, 91 and 92 (that is, all of the above-mentioned rejected claims except claims 33, 40, 70, 81 and 91) was actually reduced to practice in the US before August 20, 1998. For example, as to independent claims 21, 34, 66, 71, 73 and 83, see the "following sequence of events"

Serial No. 09/871,223Docket No.: 53924US010

discussion at the bottom half of page 3 and the referenced sketches. As to dependent claims 31, 67, 72, 79, 82 and 92, see the last three paragraphs at the bottom of page 2 and paragraph 2 on page 3. As to dependent claims 74 – 76, 84 – 86 and 89, see Sketch #4.

9. As to rejected claims 33, 40, 70, 81 and 91, I performed trials in the UK using experimental tooling to fasten exhalation valves to a layer of filtration material using thermal forming as recited in these claims. I used both boiling water and heated vegetable oil to heat the extension member portion of the exhalation valves before inserting the extension member through an opening in the filtration material and deforming the extension member using the tooling. I observed that the extension member softened but held its shape and did not melt before contacting the tooling. I made frequent trips to 3M US in connection with my work on the Genesis mask, and on my next U.S. trip I brought the tooling and thermal formed samples with me along with comparison samples made as described in the Application using cold forming. The cold formed samples included swatches of filtration material, completed flat panel masks and completed cup-shaped masks, each fastened to an exhalation valve as described in the Application. I do not recall if the thermal formed samples included completed masks, but they included at least swatches of filtration material fastened to an exhalation valve as described in the Application. While at 3M US I showed these various swatches, masks, the unassembled components and the prototype tooling to Mr. Lowell E. Christensen, demonstrated the steps in the process and operation of the tooling, and showed Mr. Christensen that in all instances an effective seal had been formed. Mr. Christensen was the global team leader for the Genesis scale-up and launch team. My U.S. visit and accompanying demonstration and explanation for Mr. Christensen took place before August 20, 1998. Mr. Christensen's accompanying Declaration under 37 CFR § 1.132 contains further details concerning my visit and its timing.

10. Claims 22 and 35 – 37 have been rejected as being unpatentable over Magidson et al. in view of U.S. Patent No. 5,325,892 (Japuntich et al.). As to Magidson et al. and dependent claim 22, see the last three paragraphs at the bottom of page 2 of Attachment A. The "respirator filter material" and "filter material" referred to in Attachment A is a multi-layer web comprising a nonwoven filter layer and inner and outer spunbond cover layers. As to Magidson et al. and dependent claims 35 –

Serial No. 09/871,223Docket No.: 53924US010

37, during my above-described UK trials I fastened exhalation valves to a previously molded cup-shaped filter material respirator blanks using cold forming and as covered by one or more of these claims. While making the above-mentioned visit to 3M US, I showed Mr. Christensen samples of the resulting molded respirators, the unassembled components and the prototype tooling, demonstrated the steps in the process and operation of the tooling, and showed Mr. Christensen that in all instances an effective seal had been formed.

11. Claims 23 – 26, 29, 32, 39, 66, 69, 77, 80, 87 and 90 have been rejected as being unpatentable over Magidson et al. in view of U.S. Patent No. 2,087,989 (Gookin). As to Magidson et al. and independent claim 66, see the “following sequence of events” discussion at the bottom half of page 3 of Attachment A and the referenced sketches. As to Magidson et al. and dependent claims 23 and 24, see the paragraph following the word “NOTE:” at the middle of page 3 of Attachment A. As to Magidson et al. and dependent claims 26 and 29, see Sketch #4. As to Magidson et al. and dependent claims 32, 39, 69, 80 and 90, see the third paragraph on page 3 of Attachment A.

12. Claims 30, 78 and 88 have been rejected as being unpatentable over Magidson et al. in view of Gookin and U.S. Patent No. 3,512,224 (Newton). As to Magidson et al. and these claims, during my above-described UK trials I fastened exhalation valves to a layer of filtration material using a further step of providing or applying a seal enhancing substance or an adhesive as recited in one or more these claims. I did this by applying a hot melt adhesive to the exhalation valve extension member before inserting the valve in an opening in the filtration material and before deforming the extension member using the tooling. I do not recall if the samples made using the additional adhesive step included completed masks, but they included at least swatches of filtration material fastened to an exhalation valve as described in the Application. While making the above-mentioned visit to 3M US, I showed Mr. Christensen samples of the resulting assembled and unassembled components and the prototype tooling, demonstrated the steps in the process including use of the adhesive, and showed Mr. Christensen that in all instances an effective seal had been formed.

13. Claims 38, 41 and 43 have been rejected as being unpatentable over Magidson et al. in view of U.S. Patent No. 4,726,365 (Jablonski). As to Magidson et al. and claims 38 and 41, see the “following sequence of events” discussion at the bottom

Serial No. 09/871,223Docket No.: 53924US010

half of page 3 and the referenced sketches in Attachment A, and note that the Genesis mask referred to in Attachment A is a mask that can be folded into a flat state and unfolded to form a shape that will create an open volume about at least a part of a wearer's face as recited in these claims. As to Magidson et al. and claim 43, see the discussion above regarding claims 33, 40, 70, 81 and 91 and thermal forming.

14. Claim 42 has been rejected as being unpatentable over Magidson et al. in view of Jablonski as applied to claims 38, 41 and 43 above and further in view of Gookin. As to Magidson et al. and claim 42, see the discussion above regarding claim 41 and paragraph 3 on page 3 of Attachment A.

15. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the Application or any patent issuing thereon.

Further Declarant saith not.

24<sup>th</sup> October 2003

Date

Desmond T. Curran

Desmond T. Curran